Diet and Chronic Degenerative Diseases

A Summary of Results from an Ecologic Study in Rural China

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1. Introduction

In 1983, a cross-sectional survey of diet, lifestyle, and disease mortality characteristics was carried out in 130 villages located in 65 counties of rural China (1). A wide variety of characteristics were recorded, ultimately yielding 367 items of information on each of a total of 6500 adults aged 35–64 years (50 subjects/village, half of each sex).

This study was designed, in part, to better understand the causes of disease within a broad context of diets, lifestyles, and disease. Investigation of “causes of disease within a broad context” means having the opportunity of examining, through various perspectives, a common cause of related diseases. To accomplish this purpose, a database ideally should include a cluster of diseases of common cause, a cluster of exposure characteristics of these common causes, and a cluster of endogenous characteristics (biomarkers) of these common causes. Although this project has expanded the investigational framework of dis-
ease causality only minimally when compared with what Nature has wrought, it nonetheless has extended the contextual framework of the more traditional research, which focuses on isolated causes and isolated diseases and isolated “mechanisms of action.”

In this chapter, the relationship of diet as a cause of the so-called chronic degenerative diseases* will be considered. These are the diseases that chiefly afflict individuals and societies who appear to have exceeded the bounds of optimal nutrition. The causation of these diseases has attracted increasing attention during the past 10–20 years in Western societies, obviously in response to the awareness that the majority of citizens prematurely and unnecessarily succumb to these diseases at great societal costs. This same diet–disease relationship also has begun to attract attention among less developed societies who are moving toward greater industrialization and wealth. They are beginning to recognize the extraordinary costs to their future development, both in total costs and in the economic disequilibrium thereby imposed, if the emergence of these diseases is allowed to flourish.

To say, however, that we will investigate the role of diet in the causation of these diseases is bound to provoke considerable skepticism among research purists, because a “diet” is enormously complex and variable and “these

*These diseases include most if not all of the cancers, most of the cardiovascular diseases, diabetes, and certain other ailments associated with the more industrialized societies; they also have been referred to as “diseases of affluence” (2), “diseases of misdevelopment” (3), or in the older literature, as “diseases of civilization” (4). We propose the term “diseases of extravagance,” because the total cost of these diseases to society is a summation of the costs of producing the causes plus the costs of treating the consequences. In this chapter, we will refer to these diseases as “degenerative diseases,” because of their association with biological degeneration, or aging.